

The diagram illustrates a speed control system for a vibration type actuator. The system includes a **TARGET POSITION** input to a **POSITION CONTROL BLOCK** (2). The **POSITION CONTROL BLOCK** outputs a control signal V_c to a **SPEED CONTROL BLOCK** (3). The **SPEED CONTROL BLOCK** outputs a frequency signal f to a **PULSE GENERATOR** (6) and a signal f (4) to a **MEMORY DEVICE**. The **PULSE GENERATOR** (6) is connected to a **POWER SUPPLY** and a **VIBRATION TYPE ACTUATOR** (13) via a series of four thyristors (7, 8, 9, 10) and four diodes (g1, g2, g3, g4). The thyristors are connected to inductors (11, 12) which are connected to the actuator. The **MEMORY DEVICE** outputs a pulse width signal PW to the **PULSE GENERATOR** (6). The **VIBRATION TYPE ACTUATOR** (13) is connected to a **SPEED DETECTION MEANS** (14) which outputs a voltage signal V to a **POSITION COUNTER** (5). The **POSITION COUNTER** (5) outputs a position signal P back to the **POSITION CONTROL BLOCK** (2).



FIG. 6

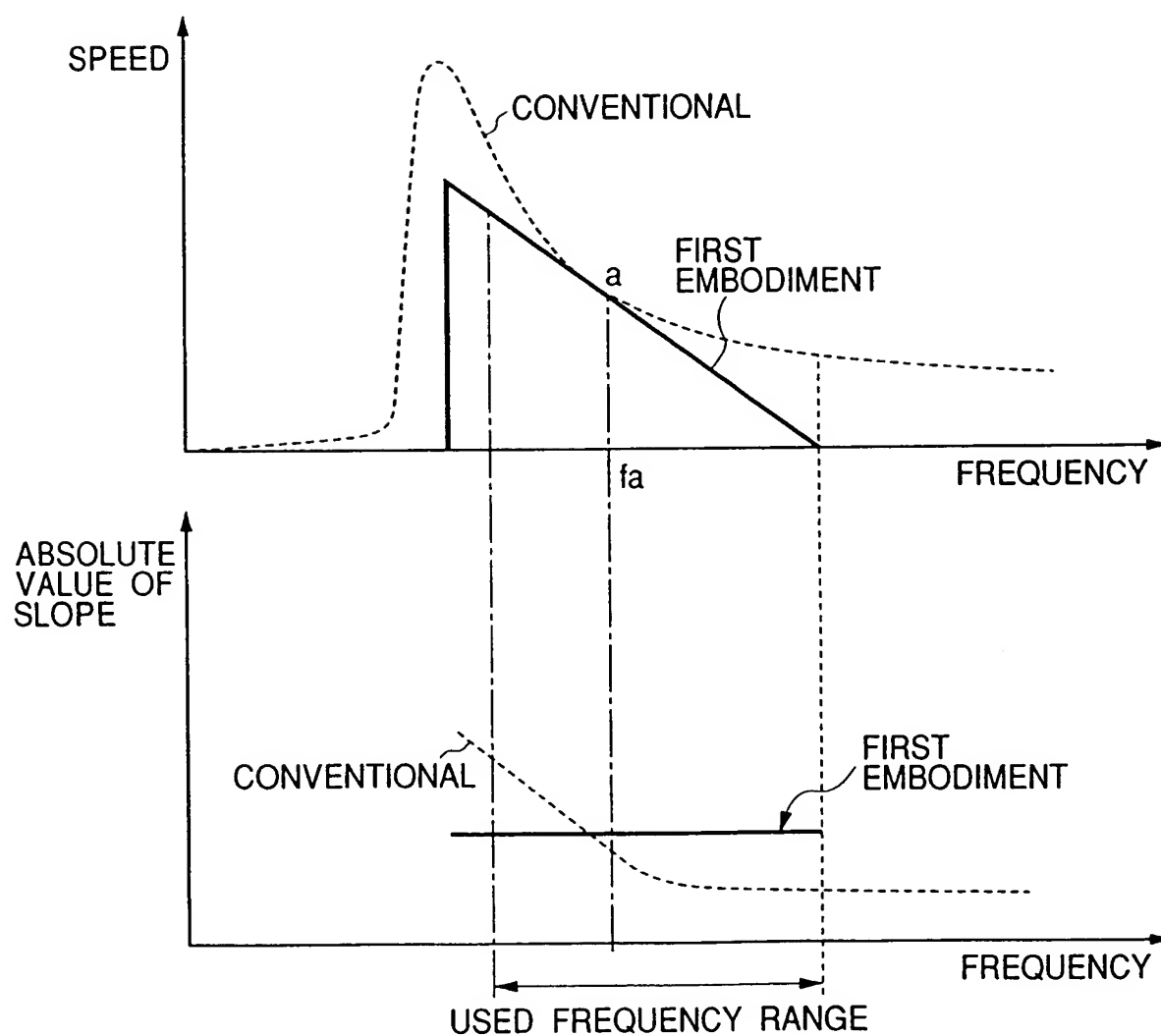




FIG. 7

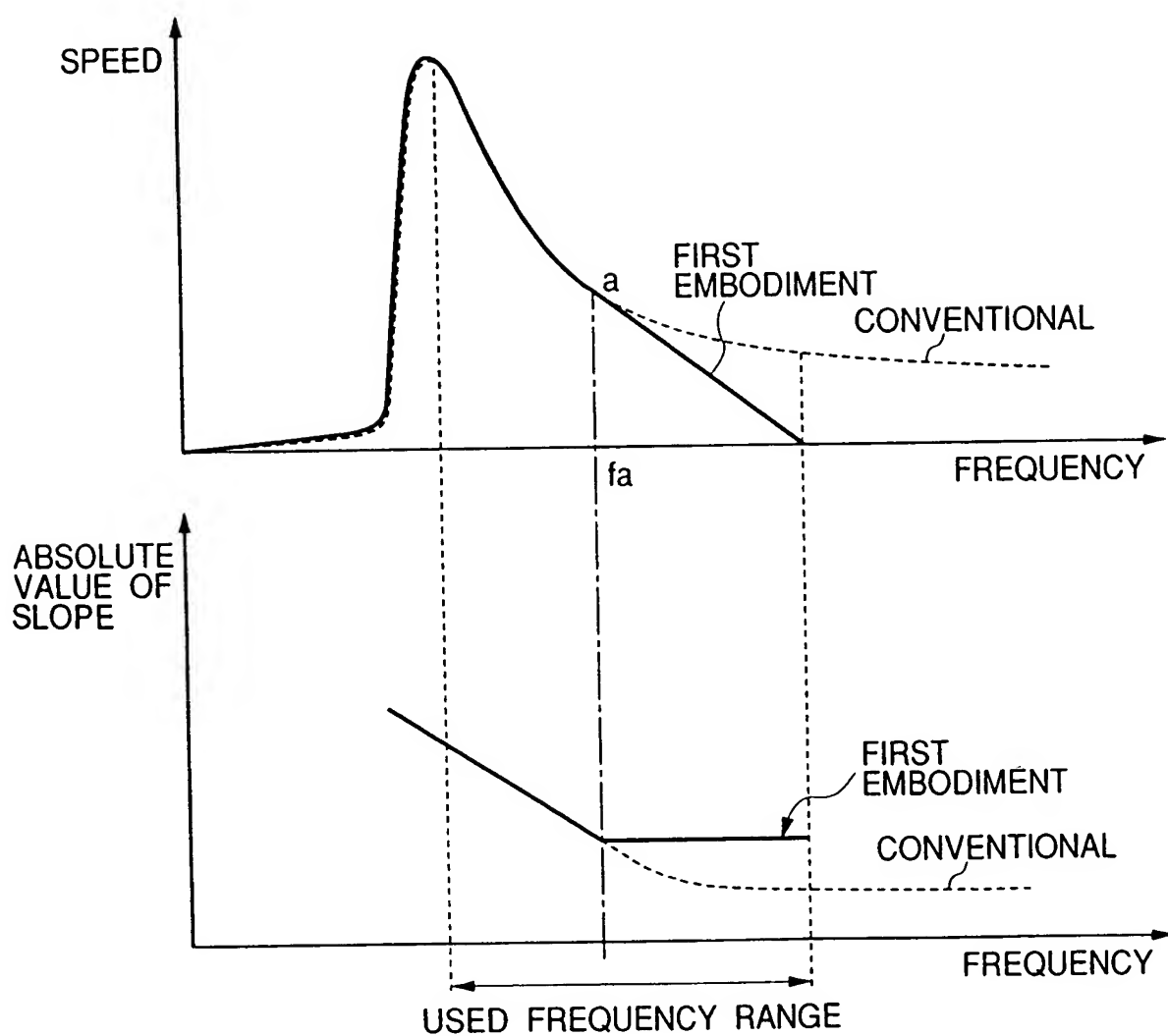




FIG. 11

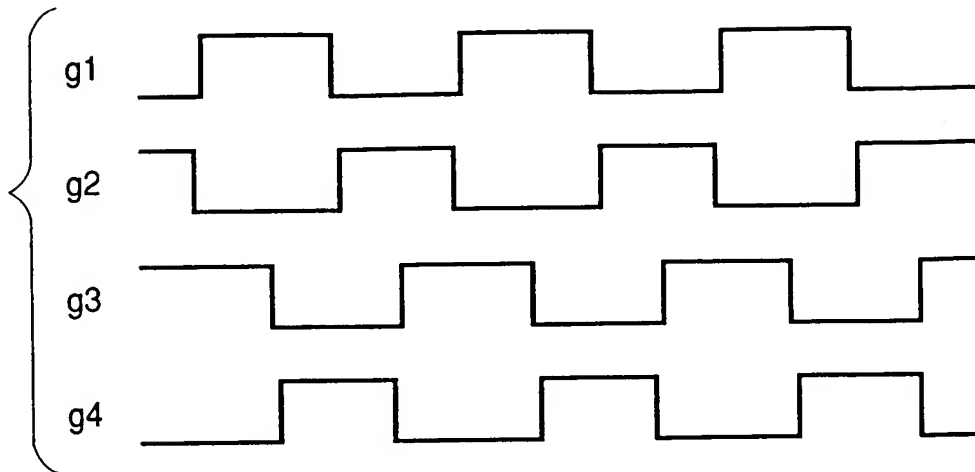


FIG. 12

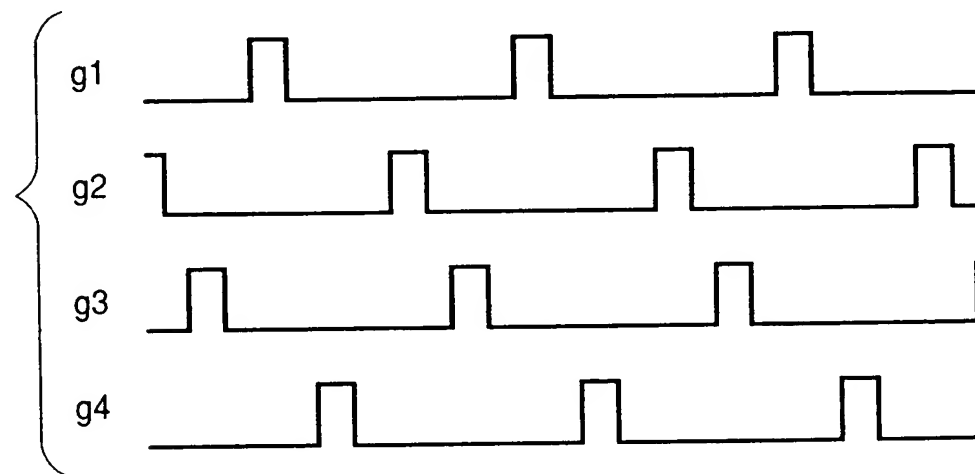


FIG. 13

